

U.S.S.N. 10/624,070

8

DKT02152 (BWA 0245 PA)

REMARKS

In the Non-Final Office Action of January 11, 2006, claims 1-27 are pending. Claims 1, 24-25, and 27 are independent claims from which all other claims depend therefrom. Claims 1, 11-12, 16, 22, 24-25, and 27 are herein amended. Claims 28-30 are newly added. The Office Action states that claim 16 stands allowed if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Claim 16 is herein amended to include all of the limitations of claims 1 and 11 and thus is now in allowable form.

The Office Action states that the drawings are objected to because reference number 176 in Figure 2B lacks a lead line. A corrected drawing sheet is submitted herewith that provides such a lead line.

Rejection of claims 1-3, 5-13, 19-21, 24, and 27 under 35 U.S.C. 102(b)

The Office Action states that claims 1-3, 5-13, 19-21, 24, and 27 stand rejected under 35 U.S.C. 102(b) as being anticipated by Stevens et al. (U.S. Pat. No. 2,960,202).

Amended claims 1 and 24 have similar limitations and are thus described together. Claim 1 recites a hydraulically controlled fan drive system. The system includes a housing assembly that contains a hydraulic fluid and an engaging circuit. The engaging circuit has a first pitot tube that is within the housing assembly and receives a portion of the hydraulic fluid. The engaging circuit engages the housing assembly to a fan shaft of an engine cooling fan in response to supply of the hydraulic fluid from the first pitot tube. Claim 24 recites a method of engaging a hydraulically controlled fan drive system, such as that recited in claim 1. In addition to many of the limitations in claim 1, claim 24 recites the limitation of variably engaging said housing assembly to a fan shaft of an engine cooling fan.

Stevens discloses a helicopter blade clutch mechanism. The clutch mechanism includes an engine shaft 14 that engages with a drive member 10.

U.S.S.N. 10/624,070

9

DKT02152 (BWA 0245 PA)

The drive member 10 rotates a housing 32, 34, and 36. Oil within the housing 32, 34, and 36 is received by a non-rotating scoop tube 104. A valve 152 permits fluid within the tube 104 to pass to a piston 94, which engages clutch plates 70 and 72. The engagement of the plates 70 and 72 engages the housing 32, 34, and 36 to a helicopter blade shaft 12.

The Office states that Stevens discloses a hydraulically controlled drive system that can be considered a fan drive system since the housing carries a fan 44. Applicants submit that although a fan 44 is attached to the housing 32, 34, and 36 of Stevens, the clutch plates 70 and 72 when engaged do not engage the housing 32, 34, and 36 to the fan 44. The fan 44 is rigidly fixed to the housing 32, 34, and 36 and thus rotates directly with the housing at all times. Thus, the clutch mechanism including the scoop tube 104 and the clutch plates 70 and 72 of Stevens do not engage a fan as does the system and method claimed.

Also, the clutch mechanism of Stevens is used to rotate helicopter blades or a helicopter blade shaft. Although some fans have blades and both helicopter blades and fan blades generate a current of air, a fan is directed to thermal energy transfer, whereas, helicopter blades are directed to vehicle lift. A fan is typically used for cooling, such as the fan 44 of Stevens, which is also stated in col. 3, lines 4-9 of Stevens. On the other hand, helicopter blades are used to provide lift for flight. Thus, a fan does not perform the same function nor does it obtain the same result as do helicopter blades. As such, the fan drive system claimed drives an engine-cooling fan, whereas the clutch mechanism of Stevens engages helicopter blades. Therefore, the clutch mechanism of Stevens does not perform the same function or provide the same result as the claimed fan drive system and method.

Furthermore, the method claimed recites the limitation of variable engagement of a fan shaft of an engine-cooling fan. As stated, the fan 44 of Stevens is not engaged by the reception of oil in the scoop tube 104 and the engagement of the clutch plates 70 and 72. In addition, the helicopter blade shaft 12, according to Stevens is either engaged or disengaged. The clutch

U.S.S.N. 10/624,070

10

DKT02152 (BWA 0245 PA)

mechanism does not provide variable engagement of the blade shaft 12. Stevens states in col. 8, lines 24-32, that the valve 152 is either in an open or closed state. When the valve 152 is open the blade shaft 12 is engaged. When the valve 152 is closed the blade shaft 12 is disengaged. Moreover, Stevens states in col. 6., line 72 to col. 7, lines 26, that when the housing or intermediate member 32, 34, and 36 is rotating faster than the drive member 10, the fan shaft 12 is disengaged. When the drive member 10 is rotating faster than the intermediate member 32, 34, and 36, the fan shaft 12 is engaged. Thus, not only does Stevens fail to teach or suggest an engine cooling fan that is variably engaged and a fan that is variably engaged using the structure claimed, Stevens also fails to teach or suggest variable engagement.

In order for a reference to anticipate a claim the reference must teach or suggest each and every element of that claim, see MPEP 2131 and *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628. Thus, since Stevens fails to teach or suggest each and every element of claims 1 and 24, claims 1 and 24 are novel, nonobvious, and are in a condition for allowance. Also, since claims 2-3, 5-13, and 19-21 depend from claim 1, they too are also novel, nonobvious, and allowable for at least the same reasons.

For the above-stated reasons it would also not have been obvious to utilize or modify the clutch mechanism of Stevens to arrive at the claimed invention. Clutch mechanisms are used in numerous applications and for various different purposes. The function, purpose, and result of the clutch mechanism of Stevens are substantially different than that of the claimed invention. One would not have looked to helicopter clutch mechanism in developing a cooling fan drive system for an engine of a vehicle. Also, Stevens lacks the necessary motivation or suggestion to perform the modifications needed to arrive at the claimed invention.

Claim 27 recites a hydraulically controlled fan drive system that includes an engaging circuit. The engaging circuit includes a clutch plate assembly that is coupled to a housing assembly and to a fan shaft. A first

U.S.S.N. 10/624,070

11

DKT02152 (BWA 0245 PA)

pitot tube is coupled within the housing and has multiple branches. The pitot tube supplies hydraulic fluid to apply pressure on a piston to engage clutch plates in the housing.

Note that although the clutch mechanism of Stevens has a scoop tube 104, the scoop tube 104 does not have multiple branches. The scoop tube 104 is a single tube with a single passage therein that extends from a reservoir in the housing 32, 34, and 36 to the hole 146. The branches of the pitot tube claimed allow for the redirection of hydraulic fluid away from a clutch plate piston.

Thus, Stevens also fails to teach or suggest each and every element of claim 27. Therefore, claim 27 is also novel, nonobvious, and is in a condition for allowance. Since claim 30 depends from claim 27, it too is novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Rejection of Claims 14 and 15 under 35 U.S.C. 103(a)

Claims 14 and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens. Applicants submit that since claims 14-15 depend from claim 1, that they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claims 14 and 15 recite the limitations of a controller when not receiving power is in a closed state or has a default position of a closed state. The Office Action states that where it is desired that the drive continue in spite of loss of hydraulic pressure, it would have been obvious to provide a clutch default to an engaged condition, the motivation being to maintain fan drive for cooling and to maintain drive power to the rotor. Applicants submit that the valve 152 and the valve member 125 of Stevens do not have such a state or default nor is such suggested anywhere in Stevens. Also, the lack of motivation to modify the Stevens reference is even stronger, given that the Office Action misidentifies the problem addressed by Applicants' claimed limitations. In particular, a primary advantage of Applicants' claimed

U.S.S.N. 10/624,070

12

DKT02152 (BWA 0245 PA)

limitations is to assure cooling when the controller is inoperative. Stevens does not speak to this problem or to this advantage.

"Defining the problem in terms of its solution reveals improper hindsight in the selection of the prior art relevant to obviousness." *Monarch Knitting Machinery v. Sulzer Morat GmbH*, 139 F.3d 877, 881 (Fed. Cir. 1998). See also *Van Veen v. U.S.*, 386 F.2d 462, 465 (Ct. Cl. 1967) wherein it is stated, "Finally, to say that the missing step comes from the nature of the problem to be solved begs the question because the Board has failed to show that this problem had been previously identified anywhere in the prior art." Thus, although the Office Action purports to recognize the need to identify a suggestion or motivation to modify the prior art, it fails to do so and, indeed, succumbs to the allure of using the claimed invention as a template for modifying the prior art. *ACS Hosp. Sys., Inc. v. Montefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984) (It is impermissible to use the patent itself as the source of suggestion). The focus must remain on what the prior art suggested to one of skill in the art, as obviousness cannot be established absent some teaching, suggestion, or incentive supporting the modification. *In re Kotzab*, 217 F. 3d 1365, 1370, 55 USPQ 2d, 1313, 1317 (Fed. Cir. 2000). No valid reason has been set forth that one of ordinary skill in the art would modify the Stevens reference.

Also, loss in hydraulic pressure is unrelated to the claimed limitation of a hydraulic fluid controller being in a closed state. On the contrary, the closed state or default position of the controller assures that cooling can occur when the controller is inoperative. Regardless of whether the claimed fluid controller is in an open or closed state, hydraulic fluid flows through the claimed pitot tube due to the rotation of the housing. Although not recited in claims 1, 11, 14, and 15, the opening of the controller reduces fluid pressure on the engaging circuit. The closing of the controller maintains fluid pressure on the engaging circuit. Applicants provide this operation explanation for understanding purposes. Thus, the closing of the controller does not allow engagement to continue due to loss in pressure nor is such stated in the claims

U.S.S.N. 10/624,070

13

DKT02152 (BWA 0245 PA)

or specification. In addition, Applicants again submit that the helicopter rotor blades of Stevens are not for cooling, but rather for vehicle lift.

Claims 4, 18, 25, and 26 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Matson (U.S. Pat. No. 4,633,986).

Applicants submit that since claims 4 and 18 depend from claim 1, that they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claim 25 recites a method of cooling an engaging circuit of a hydraulically controlled fan drive system for a cooling fan of an engine. The method includes receiving hydraulic fluid via a pitot tube and circulating fluid through the engaging circuit in response to the received hydraulic fluid.

Applicants note that neither Stevens nor Matson provide a fan drive system for a cooling fan of an engine that recites the structure claimed. Stevens is directed to the engagement of helicopter blades and Matson is directed to the clutch/brake operation of a machine press.

There is no suggestion or motivation provided in either Stevens or Matson to combine and modify the stated reference to arrive at the present invention. Until the claimed invention, there has been no suggestion in the prior art to use a pitot tube within an engine cooling fan drive system for cooling purposes. To suggest otherwise would be to use improper hindsight reasoning. Applicants are aware that hindsight reasoning is proper so long as it takes into account only knowledge which was within the level of ordinary skill at the time of the claimed invention was made and does not include knowledge gleaned only from the Applicants' disclosure. Applicants believe that to arrive at a conclusion of obviousness, especially in view of the above relied upon reference, can only be made through the gleaning of knowledge from Applicants' disclosure. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. See *In re Zurko*, 258 F.3d at 1386, 59USPQ2d at 1697 (Fed. Cir. 2001).

U.S.S.N. 10/624,070

14

DKT02152 (BWA 0245 PA)

Referring to MPEP 2141.01(a), while the Patent Office classification of references and cross-references in the official search notes are some evidence of "nonanalogy" or "analogy" respectively, the court has found "the similarities and differences in structure and function of the inventions to carry far greater weight." *In re Ellis*, 476 F.2d 1370, 1372, 177USPQ526, 527 (CCPA 1973). Applicants are unsure of the classification of the claimed invention. However, it appears that the classifications of Stevens and Matson are not the same and that the classification of Matson most likely implies nonanalogy. Nevertheless, Applicant submits that the structure, function, and purpose of the systems of Stevens and Matson are clearly different than that of the present invention. With respect to Stevens, see above arguments with respect to claims 1 and 24. With respect to Matson, the clutch and brake disclosed are not used to engage or brake a cooling fan of an engine, but rather are used in the driving of a press. Matson would not have logically commended itself to the inventor's attention in considering the problems solved by the systems and method claimed. In developing an engine cooling fan drive system for improved engine cooling, one would clearly not look to a machine press clutch/brake for the purpose of driving or slowing down the motion of a press. Again clutch mechanisms are used in various arts and for various different purposes. It would have been over burdensome to expect that the Applicants review and/or search all possible clutch mechanisms in developing the fan drive system claimed. Thus, the Applicant submits that Stevens and especially Matson are nonanalogous art and to use such references is far reaching at best.

Claim 26 recites the limitations of channeling hydraulic fluid through a piston housing into a fan shaft chamber and directing said hydraulic fluid through said fan shaft chamber into and through a clutch pack. Applicants submit that since Stevens fails to disclose a pitot tube that is used to perform the cooling claimed, that Stevens fails to teach or suggest any of the limitations of claim 26. Also, although Matson discloses a pitot tube 42 for directing oil to clutch plates, Matson fails to teach or suggest either of the stated limitations.

U.S.S.N. 10/624,070

15

DKT02152 (BWA 0245 PA)

The oil in Matson is not directed through a piston housing or into or through a fan shaft chamber. The oil in Matson is directed around the clutch engagement face 70 and the brake engaging face 87. Nowhere in the Matson reference is a fan shaft chamber disclosed or suggested. Thus, claim 26 is further novel and nonobvious for the above-stated reasons.

Referring to MPEP 706.02(j) and 2143, to establish a *prima facie* case of obviousness the prior art reference(s) must teach or suggest all the claim limitations, see *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Thus, claim 25 and 26 are also novel, nonobvious, and are in a condition for allowance.

Claims 17 and 23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Spokas (U.S. Pat. No. 4,094,393).

Since claims 17 and 23 depend from claim 1, they are also novel, nonobvious, and are in a condition for allowance for at least the same reasons.

Claim 23 recites the limitation of a pressure relief valve relieving pressure within said first pitot tube. The Office Action states that Spokas teaches providing a pressure relief valve at 100. Applicants submit that although the valve 100 of Spokas is a pressure relief valve, it does not relieve pressure within a pitot tube. The valve 100 is used to allow lubricant to flow to a clutch. The pitot tubes 60 of Spokas are simply used as lubricant return lines. The opening of the valve 100 does not affect the pressure in the pitot tubes 60. Thus, the valve 100 is not the same as the valve claimed. Therefore, claim 23 is further novel and nonobvious for the stated reasons.

Claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Stevens in view of Lutz (U.S. Pat. No. 3,458,020).

Since claim 22 depends from claim 1, it is also novel, nonobvious, and is in a condition for allowance for at least the same reasons.

Also, claim 22 is herein amended to clarify that the claimed temperature sensitive device is sensitive to temperature within the claimed housing assembly. The valve 10 of Lutz, referred to by the Office Action, is activated via a bellows 15, which is temperature sensitive to a cooling water.

U.S.S.N. 10/624,070

16

DKT02152 (BWA 0245 PA)

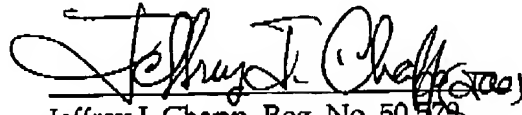
The bellows 15 and the cooling water are external to and the temperatures thereof are unrelated to the temperature of the housing 3, 8. Thus, claim 22 is further novel and nonobvious for the stated reasons.

In light of the amendments and remarks, Applicants submit that all the rejections are now overcome. The Applicants have added no new matter to the application by these amendments. The application is now in condition for allowance and expeditious notice thereof is earnestly solicited. Should the Examiner have any questions or comments, he is respectfully requested to contact the undersigned attorney.

The Commissioner is hereby authorized to charge any additional fees, which may be required, or credit any overpayment to Deposit Account No. 50-0476.

Respectfully submitted,

ARTZ & ARTZ, P.C.


Jeffrey J. Chapp, Reg. No. 50,579
28333 Telegraph Road, Suite 250
Southfield, MI 48034
(248) 223-9500

Dated: March 9, 2006